

NOMENCLATURE OF NOTOMYS (MURIDAE) IN THE LAKE EYRE BASIN

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In identifying some recent collections of *Notomys* my attention has been directed again to the unsatisfactory state of the nomenclature of two of the species which are widespread in the arid districts of the State of South Australia and are particularly important numerically in the Lake Eyre Basin.

In 1939, in checking the results of my own field work in that area against the considerable series of *Notomys*, which had accumulated in the South Australian Museum from the same district, I was drawn to the provisional conclusion (for reasons fully stated in my subsequent paper), that *Notomys aistoni* Brazenor, 1934, was a colour phase only of *N. cervinus* Gould, 1853; this species is known to the local aborigines (Wonkanooroo) as oorarric. A second species known as wilkintie, which I then considered to be the *N. cervinus* of Waite and Wood Jones and most modern authors, was thereby rendered innominate; but as any measures towards stabilization depended on a re-examination of the type of *N. cervinus* Gould in London, the matter was left in abeyance. No further factual evidence bearing on the subject was published until 1951, when Tate in his review of the genus, made this re-examination in relation to topotypes of *N. aistoni* and found sufficient agreement to substantiate my suggestion of 1939, and to relegate the latter to the synonymy of *N. cervinus* Gould.

The way was thereby opened for the recognition of the wilkintie in nomenclature, but this step was complicated by a doubt as to the real status of *Notomys fuscus* Wood Jones, 1925, of which no type was designated and of which only a single topotype of the Wood Jones series is available for study. Iredale and Troughton (Check List of Aust. Mammals, 1934) have already equated *N. fuscus* to *N. cervinus* of Gould, but it is not clear whether this finding was based on the Wood Jones series from Ooldea or on some of the several "dark forms" which have been recorded from other localities; their synonymy is, of course, no longer acceptable owing to the revolution in the conceptions of the real character of Gould's species (*infra*).

A critical re-examination of the above topotype of *N. fuscus* has convinced me of its specific identity with the Lake Eyre Basin wilkintie, but the question remains as to whether the differential characters relied on by Wood Jones (most of which show considerable variation in the Lake Eyre Basin) should be accepted at the sub-specific level or regarded merely as a phase of polymorphism of which there are already illustrations in the genus. The single specimen available is quite inadequate for a solution of this problem, which will depend ultimately on extended field work. Wood Jones, however, writes (1925) of having had numerous specimens from Ooldea and as he was evidently assured of the uniformity of *N. fuscus* at that place it may be accepted that the differential characters at least have a higher frequency at Ooldea than in the Lake Eyre Basin. I have therefore chosen the first alternative and now regard *N. fuscus* as being represented by two geographical forms based on these respective areas.

These conclusions may be summarised as follows:

1. NOTOMYS CERVINUS Gould, 1853.

Hapalotis cervinus Gould, 1853, Proc. Zool. Soc. London (1851), p. 127.

Notomys cervinus Thomas, 1921, Ann. Mag. Nat. Hist., 9 (8), p. 425, *et seq.* (lectotype).
Podanomylus aistoni Brazenor, 1934, Mem. Nat. Museum Melbourne, 8 (81), Pl. V, Fig. 8;
Pl. VI, Fig. 5.

Notomys aistoni Finlayson, 1939, Trans. Roy. Soc. S. Aust., 63 (1), p. 103; Pl. IV, Figs. G,
H and P; Pl. V, Figs. M, N and O.

Notomys cervinus Tate, 1951, Bull. Am. Mus. Nat. Hist., 97 (4), p. 262.

A species of medium size, with no gular pouch, grey based belly fur invariable in adults, conspicuously shortened skull and grooved upper incisors.

A raised nude presternal gland is seasonally developed in the male, but there is no tract of specialised hair on either gular or sternal sites. Pes comparatively stout, with large plump pads and the hallucal pad always present; under surface of toes very lightly haired. Ear long.

Pelage soft; mid-dorsally from 10-14 mm long; colour dorsally exceedingly variable, ranging from pinkish cinnamon of Ridgway scarcely pencilled with near black tips in the richer phases, through intermediate strongly grizzled drabs, to near blackish. Ventral fur white terminally and usually pale plumbeous at base, though white-based sub-adults occur.

Skull short and broad, with the anterior zygoma root strongly out-thrust and a square zygomatic outline. Interorbital space wide. Anteorbital fossa broad and shallow, with the external wall turned uniformly inward. Free margin of zygomatic plate with a shallow concavity only and with the upper spur little developed. Anterior palatal foramina usually exceeding the anterior margin of M¹ and very wide. Mesopterygoid fossa constantly wide and frequently lyrate in outline. Bulla small.

Upper incisors distinctly orthodont; narrow and delicate and with the anterior surfaces constantly marked by a broad and shallow groove.

Dimensions.—The range of flesh dimensions in 47 individuals and of skull dimensions in 17 is given in my paper of 1939 and Tate (1951) quotes some measurements of the lectotype.

Type (lectotype of Thomas, 1921).—British Museum No. 53, 10, 22, 7; collected by Capt. Charles Sturt in 1845 at 29°06' S. lat. and 141° E. longt. Also recorded from Ooldea and several intermediate localities.

Ninety-three examples examined, many of them collected by L. Reese, Esq.

From 1929-34 this species appeared to be much more numerous in the Lake Eyre Basin than the next, but in recent collections the proportions have been reversed.

2. NOTOMYS FUSCUS Wood Jones, 1925

Thylacomys cervinus Waite, 1898, Proc. Roy. Soc. Vict., X, 2, 122; Pl. VI, Fig. 3 (in part)
rec. Hapalotis cervinus Gould, 1853.

Aescopharynx cervinus Waite, 1900, Ann. Mag. Nat. Hist., 7 (5), p. 222 (in part); *rec. A. cervinus* Waite, 1915, Trans. Roy. Soc. S. Aust., 39, p. 735 (= *N. alexis* Thos.).

Aescopharynx cervinus Wood Jones, 1925, Rec. S. Aust. Museum, 111 (1), p. 3 (in part).

Aescopharynx fuscus Wood Jones, 1925, *Ibid.*

Notomys cervinus Brazenor, 1934, Mem. Nat. Mus. Melbourne, 8, p. 82 (in part).

Notomys cervinus Finlayson, 1939, Trans. Roy. Soc. S. Aust., 63 (1), p. 108; Pl. IV, Figs. I, J and O; Pl. V, Figs. J, K and L.

A medium-sized species with a gular pouch in both sexes, strongly haired undersurface of toes and an elongate much modified skull, with tapered zygomatic outline.

The gular gland is constant and the floor of its pit is densely clothed with shining adpressed white hair, which forms a conspicuous disk in dried skins.

Rarely a sternal gorget of glandular hair is feebly developed in males. In the pes the undersurface of the toes is often thickly clothed with bristle hairs obscuring the integumental folds and overlapping the apical pads. The interdigital pads are relatively small and the hallucal pad may be absent. Ear very long.

The skull is differently shaped from that of *N. cervinus* Gould with a longer muzzle region, much less prominent anterior root of zygoma and a zygomatic outline which tapers markedly forwards. Interorbital region narrower. Anteorbital fossa narrow and deep and in fully adult examples the external plate often nearly parallel to the rostral axis. Free margin of zygomatic plate deeply concave and with a well-marked upper spur. The anterior palatal foramina variable in length, sometimes falling short of M^1 and relatively narrow. Mesopterygoid fossa somewhat variable and decidedly narrower than in *N. cervinus* Gould and the processes less frequently flared outwards at their extremities and often parallel. Bulla very large.

Upper incisors heavier than in *N. cervinus* Gould, less orthodont and their anterior surfaces ungrooved.

Subspecies A. NOTOMYS FUSCUS FUSCUS Wood Jones, 1925

(as given by the author *op. cit. supra.*)

Pes relatively heavy; hallucal pad absent; rhinarium heavier and less hooked.

Pelage with dorsal colouration darker, isabelline brown or drab and with the bases of the ventral fur pale smoky.

Type (lectotype).—Young adult male in alcohol with skull removed and prepared. Formerly of the private collection of Professor F. Wood Jones, subsequently No. 524 in the museum of the Zoological Department of the University of Adelaide and now registered number M6258 of the South Australian Museum.

Type Locality.—Ooldea district, South Australia.

Dimensions of the Type.—Head and body, 105; tail, 127; pes, 34.5; ear, 25.

Skull.—Greatest length, 30.0; basal length, 24.5 ca.; zygomatic breadth, 15.2; brain case breadth, 14.4; interorbital breadth, 5.3; nasals, length, 10.7; nasals, breadth, 2.6; palatal length, 15.0; anterior palatal foramina, 4.9; bulla length, 5.8 ca.; upper molar series, 4.7.

Subspecies B. *Notomys fuscus eyreius* nov.

Hallucal pad present in about 70 per cent. of the series examined. Pelage somewhat thinner and slightly crisper than in *N. cervinus* Gould of the same districts; the dorsal colour variable but generally brightly fulvous or rufescent; at its richest, orange cinnamon of Ridgway, more vinaceous than *N. cervinus* Gould and with light sepia pencilling rather than black, but in a large proportion of specimens scarcely different from the buff forms of that species. A dark ashy phase (about wood brown) occurs, with a frequency of less than 2 per cent. in the available sample. Ventral fur most frequently pure white to the base, but distinctly grey (pale plumbeous) in 10 per cent. of individuals.

Type.—Adult female; skin and skull; South Australian Museum, registered number M4595. Collected by G. Aiston, Esq., April, 1934.

Type Locality.—Mulka (New Well), on the east side of Lake Eyre about 50 miles ENE of the Barcoo inflow.

Dimensions of the Type.—Head and body, 100; tail, 141; pes, 35; ear, 25.

Skull.—Greatest length, 30·3; basal length, 24·8; zygomatic breadth, 16·2; braincase breadth, 15·3; interorbital breadth, 5·6; nasals, length, 10·9; nasals breadth, 2·8; palatal length, 15·1; anterior palatal foramina, 5·1; bulla length, 6·2 ca.; upper molar series, 5·0.

The range of flesh dimensions in 22 examples and of skull dimensions in four examples are given in my paper of 1939 (*supra*).

Fifty-two examples examined, including a series of 27 paratypes from Mulka and 25 from other localities in the Lake Eyre Basin, most of the latter having been collected and carefully prepared in the field by Mr. Paul Lawson of the Museum staff, and Mr. R. Tedford.

This species which occurs sympatrically with *N. cervinus* Gould and *N. mitchelli* vars. both in the Lake Eyre Basin and Ooldea district is readily distinguishable from them by both somatic and cranial features. From *N. alexis* Thomas which is now known to occur on the north-east margin of the Basin, the distinction is equally valid, though sometimes less obvious, and is more justly appreciated in series than individually.

The chief points in which *N. alexis* differs are as follows. Both foot and ear are smaller; the ear decidedly so, both length and breadth averaging lower and the overall size therefore markedly less. The dorsal pelage shows a range of ferruginous brown tones in the subterminal band quite absent from *N. fuscus*. White-based belly fur occurs in *N. alexis*, though with much less frequency than in *N. fuscus eyreius*; but distinction from *N. fuscus fuscus* in this character may not be practicable. The gular pit is less strongly haired, and in dried material its site is marked by an oval area of nude skin rather than a disk of specialised hair. On the other hand, the sternal tract of glandular hairs in males is strongly developed and resembles the condition in *N. mitchelli*.

The adult skull is generally less modified in outline and more *pseudomys*-like than in *N. fuscus*, though examples occur which are difficult to distinguish and in the remaining points listed the distinction is also of an average character. The brain case is smaller, narrower and less pyriform; the zygomatic process of maxilla in lateral aspect less expanded and differently shaped; the anteorbital fossa broader and shallower; the anterior palatal foramina wider; the bulla decidedly smaller and the incisors more opisthodont.

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